

IN THE SPECIFICATION

Please amend the Specification as follows:

Page 1, line 13, under the CROSS REFERENCE TO RELATED APPLICATIONS section, please amend the paragraph beginning thereat as follows:

a1 "This application is also related to U.S. Application No. 09/320,409, ~~Attorney Docket No. 003918.P002~~, filed May 26, 1999 by inventors Wenbin Jiang et al, now issued as U.S. Pat. No. 6,213,651; and U.S. Application No. 09/816,319, ~~Attorney Docket No. 003918.P002X2~~, filed March 22, 2001 by inventors Wenbin Jiang et al, pending, both of which are also to be assigned to E2O Communications, Inc."

Page 7, line 19, please amend the paragraph beginning thereat as follows:

a2 "Figures 21A-21I ~~[[21H]]~~ illustrate rear cross sectional views of alternate embodiments of the invention including multiple printed circuit boards."

Page 46, line 27, please amend four consecutive paragraphs beginning thereat and continuing through to page 48, line 13 as follows:

a3 "Referring now to Figure 17C, fiber optic module 1704 illustrated. Fiber optic module 1704 includes a housing ~~[[will]]~~ or cover 1719, a base 1705, a first vertical printed circuit board 108V, and a second slanted printed circuit board 106S. Fiber optic module 1704 may further include septum 1715

to shield electromagnetic radiation from either printed circuit board. The first vertical printed circuit board 108V includes a first optical electronic device 110 or 111. The second slanted printed circuit board 106S includes a second opto electronic device 110 or 111. In one embodiment the first optic electronic device is coupled to the vertical printed circuit 108V in a straddle mount configuration. In one embodiment the second optic electronic device is coupled to the second slanted printed circuit board 106S in through hole mount configuration.

Referring now to Figure 17D, a fiber optic module 1706 is illustrated. Fiber optic ~~modules~~ module 1706 includes a housing or cover 1719, a base 1705, a first slanted printed circuit board 108S, and a second vertical printed circuit board 106V. A first optic electronic device is coupled to the first slanted printed circuit board 108S and a second optic electronic device is coupled to the second vertical printed circuit board 106V. Either the first and/or second optical electronic devices maybe a transmitter or receiver 110 or 111. In one embodiment the first optical electronic device is coupled to the first slanted printed circuit board 108S using a through hole mount configuration. In one embodiment the second optical electronic device 110 or 111 is coupled to the vertical printed circuit board 106V using a straddle mount configuration. The base 1705 may also be referred to as a cover.

Referring now to Figure 18A, a fiber optic module 1800 is illustrated. Fiber optic module 1800 includes a base or cover 1805, a housing or cover 1819, a first vertical printed circuit board ~~[[108V-]]~~ 108V', and a second slanted printed circuit board ~~[[106F-]]~~ 106S'. The vertical printed circuit board ~~[[108V-]]~~ 108V' includes a ground plane 118. The second slanted

printed circuit ~~[[106S-]]~~ 106S' includes a ground plane 114.

Each of the ground planes provides sufficient shielding.

Referring now to Figure 18B, fiber optic module 1802 is illustrated. Fiber optic module 1802 includes a base or cover 1805, a housing or cover 1819, a first slanted printed circuit board ~~[[108S-]]~~ 108S', and a second vertical printed circuit board ~~[[106V-]]~~ 106V'. The first slanted printed circuit board ~~[[108S-]]~~ 108S' includes a ground plane 118. The second vertical printed circuit board ~~[[106V-]]~~ 106V' includes a ground plane 114. Each of the slanted printed circuit boards in Figures 18A and 18B maybe substituted with a horizontal printed circuit board. In Figures 18A and 18B each of the first and second printed circuit boards included a ground plane. However, it maybe the case that a single ground plane on one of either of the printed circuit boards is sufficient for shielding purposes."

Page 48, line 23, please amend the paragraph beginning thereat as follows:

"Referring now to Figure 19B, a fiber optic module 1902 is illustrated. Fiber optic module 1902 includes a base or cover 1905, a housing or cover 1919, a first slanted printed circuit board 108S and a second vertical printed circuit board ~~[[106V-]]~~ 106V'. The second vertical printed circuit board ~~[[106V-]]~~ 106V' includes a ground plane 114 while the first slanted printed circuit board 108S does not. In Figures 19A-19B, slanted printed circuit boards 106S and 108S were respectfully described which can also be substituted with a horizontal printed circuit board 106H or horizontal printed circuit board 108H respectfully."

Page 56, line 16, please amend the paragraph beginning thereat as follows:

a5
"Referring now to 21G, the fiber optic module 2112 is illustrated. The fiber optic module 2112 includes a first vertical printed circuit board 105V, a second vertical printed circuit board 106V, a third horizontal printed circuit board ~~[[108H]]~~ 108H', a base or cover 2105, and a housing or cover 2119. The first and second printed circuit boards are vertical printed circuit boards parallel with one another and the optical axes of the first and second optical electronic devices coupled thereto. The third horizontal printed circuit board ~~[[108H]]~~ 108H' includes a third and fourth optical electronic devices coupled thereto. In one embodiment the first and second optical electronic devices are coupled respectively to the first vertical printed circuit board 105V and the second vertical printed circuit board 106V using a straddle mount configuration. In one embodiment the third and fourth optical electronic devices are coupled to the third horizontal printed circuit board ~~[[108H-]]~~ 108H' using a though hole mount configuration."

Page 58, line 3, prior to the paragraph beginning thereat insert the following eleven new paragraphs:

all
--Referring now to Figure 21I, an embodiment of a fiber optic module 2116 with four horizontal printed circuit boards is illustrated. The fiber optic module 2116 includes a base or cover 2105, a first horizontal printed circuit board 105H, a second horizontal printed circuit board 106H, a third horizontal

printed circuit board 107H, a fourth horizontal printed circuit board 108H, and a housing 2119.

The base 2105 has a first opening, a second opening, a third opening and a fourth opening to respectively receive a plurality of pins of the first, second, third, and fourth horizontal printed circuit boards.

The first, second, third, and fourth horizontal printed circuit boards are arranged parallel to the base. The first first, second, third, and fourth horizontal printed circuit boards each have their respective plurality of pins extending through the first, the second, the third, and the fourth openings in the base 2105 to couple to a system.

ae The first horizontal printed circuit board (PCB) 105H is arranged parallel to a first optical axis of a first optoelectronic device 110 or 111. The first optoelectronic device has terminals coupled to the first horizontal printed circuit board 105H.

The second horizontal printed circuit board (PCB) 106H is arranged parallel to a second optical axis of a second optoelectronic device 110 or 111. The second optoelectronic device has terminals coupled to the second horizontal printed circuit board 106H.

The third horizontal printed circuit board (PCB) 107H is arranged parallel to a third optical axis of a third optoelectronic device 110 or 111. The third optoelectronic device has terminals coupled to the third horizontal printed circuit board 107H.

The fourth horizontal printed circuit board (PCB) 108H is arranged parallel to a fourth optical axis of a fourth optoelectronic device 110 or 111. The fourth optoelectronic

device has terminals coupled to the fourth horizontal printed circuit board 108H.

The housing 2119 may be a shielded housing coupled to the base 2105 and encase the first, second, third, and fourth horizontal printed circuit boards in order to reduce electromagnetic interference (EMI).

all The fiber optic module 2126 may further an optical block such as optical block 2202 illustrated in Figures 22A-22C. The optical block couples to the first, second, third and fourth optoelectronic devices. In order to do so, the optical block has first, second, third and fourth openings to receive the first, second, third and fourth optoelectronic devices respectively. The optical block further has a first lens, a second lens, a third lens, and a fourth lens to couple photons between the first, second, third and fourth optoelectronic devices and first, second, third and fourth optical fibers respectively

The fiber optic module 2126 may further include a nose coupled to the base 2105, such as nose 202 illustrated in Figure 2. The nose can receive an optical fiber connector and hold first, second, third and fourth optical fibers substantially fixed and aligned with the first, second, third, and fourth optical openings of the optical block. The fiber optic module 2126 may further have a nose shield surrounding the nose to reduce electromagnetic interference.

With four printed circuit boards and four optoelectronic devices, the third horizontal printed circuit board and the third optoelectronic device and the fourth horizontal printed circuit board and the fourth optoelectronic device may provide redundancy for the fiber optic module. Alternatively, the first horizontal printed circuit board and the first optoelectronic

Appl. No. 09/833,138

Amdt. Dated 05/20/2004

Reply to Office Action of 05/05/2004

ac device; the second horizontal printed circuit board and the second optoelectronic device; the third horizontal printed circuit board and the third optoelectronic device; and the fourth horizontal printed circuit board and the fourth optoelectronic device may provide a four channel fiber optic module.--
